This combined synopsis and RFQ advertises the Government's bona fide need for SEVEN (7) high data rate, fully programmable space data demodulators and test modulators for its command and data acquisition (CDA) stations in Fairbanks, AK and Wallops, VA. In subsequent text reference is made to "seven demodulators". Priced options are also requested for up to three (3) additional units, although the Government's minimum requirement is for 7 demodulators and two (2) test modulators. Offerors are instructed that if the test modulator is integrated in the demodulator chassis, each item may contain a test modulator; however, if a separate chassis is proposed for the test modulator, only 2 deliverable test modulator units, in addition to the seven demodulators, are required. FOR REFERENCE PURPOSES THE OFFERORS' ATTENTION IS DIRECTED TO THE RFI DATED March 21, 2003, AND ENTITLED: "59--Market Survey-High Data Rate-Fully Programmable Receiver/ Demodulator w/ Selectable Modulation". However, this RFQ shall represent the final specification in all instances wherein a conflict appears. All 7 demodulators and 2 test modulators must be delivered F.O.B. Destination to Harris Technical Services Corp. (Harris), Attn: Mr. Frank Bramhall, 301 N. Washington St., Bellevue, NE 68005-2599. Four (4) units will ultimately be located at the NOAA/Fairbanks Command and Data Acquisition Station (FCDAS) 1300 Eisele Road, Fairbanks, AK 99712-1725; and three (3) at the Wallops Command and Data Acquisition Station (WCDAS) 35663 Chincoteague Rd Wallops, VA 23337-0039. As part of the selection process defined by this RFQ, a test and evaluation "qualification unit(s)" (consisting of 1 demodulator and 1 test modulator) is required to be furnished to the Harris location for its evaluation by the Government by July 7, 2003, at the Offeror's own expense and at no risk to the Government; this unit will subsequently be sent to Fairbanks for testing and evaluation in the operational environment. The Government will be responsible for delivering these items to FCDAS and returning them in the same condition to each respective vendor following a 30-45 day test and evaluation period. The Offerors may attend either or both of these tests on a non-interference basis, if they desire, and at their own expense, by furnishing the name(s) of the attendees. The rules of engagement in the test plan shall govern interactions with the offerors during the testing sequence. Following the Government's selection of the winning offeror, all seven units from the selected contractor must be delivered by the following time period: from September 30, 2003 (early delivery) to December 31, 2003 (late delivery). This advertisement is a Request for Quote, under RFQ Number IPO-RFQ-3-HDR-0001 to acquire high data rate, fully programmable space data demodulators and test modulators, which are commercial items as defined in FAR 2.101. This Request for Quote (RFQ) combines the synopsis and specification, and requests a firm fixed price proposal by May 30, 2003. The required system specifications set forth below correspond to the Government's need to accommodate multiple missions without the need for equipment customization, delays due to equipment integration, preliminary in-plant programming, or other modifications. Therefore, this commercial item specification must be for the acquisition of a fully programmable demodulator and test modulator that covers multiple data rates including rates from 1 Mbps to 400 Mbps for QPSK and from 1 Mbps to 200 Mbps for BPSK, as well as multiple modulation types. We immediately foresee supporting the list of missions below, but the multi-mission receiver shall not necessarily be limited to this list of selected missions: WindSat Coriolis, METOP, AQUA, TERRA, AURA (Jan. 2004), , NPOESS Preparatory Project (NPP), EO-1,

ICESat, Radarsat, Landsat-7, ALOS, GIFTS, and JERS-1. The National Oceanic and Atmospheric Administration (NOAA), an agency of the U. S. Department of Commerce (DOC), is conducting a commercial item acquisition to procure a high data rate, fully programmable (also referred to as "selectable"), space data ground terminal application. The items being procured are a demodulator and a test modulator. Other requirements include a training option, licensing, warranty, and an extended warranty option. The specific characteristics follow. All specifications are mandatory unless otherwise noted. The demodulator must be capable of accepting and processing data rates from 1 Mbps to 400Mbps for QPSK and from 1 Mbps to 200 Mbps for BPSK. The desired input rate must be software selectable. The input frequency must be720 MHz +/-400 kHz. The input impedance must be 50 ohms with a VSWR of 2:1 maximum. The phase noise must equal or be less than: 70 dBc @ 10 kHz, -100 dBc @ 100 kHz, and –120 dBc @ 1 MHz. The selectable modulation types must be: BSPK, QPSK, SQPSK (OQPSK), and UQPSK; the following modulation types are desirable: AQPSK and 8PSK. The UQPSK demodulator (used for direct broadcast for TERRA) must accept and process a differential data rate on I and Q of up to 4:1 minimum in either order. All digital outputs must be differential Emitter Coupled Logic (ECL). The demodulator must output NRZ-L data and clock for the I and Q channels and a merged I and Q. The demodulator must demodulate and bit-synchronize NRZ-L/S/M and SP-L (Bi-phase) PCM, and convert the differential decoding of NRZ-S/M to NRZ-L for output. The demodulator must also perform CCSDS compatible down-link derandomization using the following Polynomial: $h(x) = x^8 + x^7 + x^5 + x^3 + 1$. The BER must not be worse than the theoretical probability of error more than the following: <150 Mbps: =<1 dB, 150 Mbps to400 Mbps: =<2 dB for an Eb/No of 2.0 to 12.5 dB. The bit synchronizer data rate variation must be: within 0.1% for data rates up to 150 Mbps and within 0.01% for data rates above 150 Mbps. The demodulator must provide quality of service statistics (packets delivered, BER, etc.) on the output data to the control PC workstation upon request. Eb/No should be shown to within 0.1 dB in 0.1 dB steps. Input signal strength should be shown to within 2 dBm in steps of 1 dB. The demodulator must provide software selectable CCSDS compatible Viterbi decoding for forward error correction with a constraint length of K=7, rate = 1/3, 1/2, 3/4. The Viterbi decoder must be capable of being bypassed when receiving non-Viterbi encoded data. The Viterbi decoding must be 3-bit soft-decision and must provide 5.2 dB of gain with an input Eb/No of 6.4 dB or greater. The demodulator must provide I.F. band-limiting filters that are applicable to the data rate being received, including root-raised cosine and Sin(x)/X compensation. The root-raised cosine filter must have a selectable alpha of 0.3 to 0.8 in steps of 0.05. The filter types and combinations must be software selectable. It is desired that the demodulator and test modulator have an MTBF of 20,000 hours or greater. The unit must support remote command, control, and status via a TCP/IP interface, and an API must be provided. Warranty of one-year parts and labor is strongly DESIRED. The Government requests separately priced extended warranty periods covering software and hardware (priced in annual increments (1 or more years, up to 5 years), with pre-priced remote technical support. The test modulator must be compatible with the demodulator specified above. It must support end-to-end testing with a modulated RF signal at 720 MHz +/-3 ppm that can be injected into the demodulator and other devices as desired. The modulation types, encoding, and data rates must be the same as those specified for the demodulator above. The modulation

type, encoding, and data rates must be software selectable. The data set used for the modulation must be a known data set that can be used to determine the performance of the demodulator and other data processing devices. The modulation must be capable of being turned off through software control so that the test modulator will output a continuous wave (CW). The RF output of the test modulator must be capable of being switched off through software control. The test modulator must provide software controlled simulated Doppler shift identical to that of a low earth orbiting satellite. The Government intends to use its Contractor, Harris Technical Services Corp., Bellevue, NE, The Raytheon Corp., User Technology Associates, and The Aerospace Corporation, El Segundo, CA, as its support contractors to assist it in evaluating the merits of each system level feature. We anticipate setting up a test and demonstration period lasting approximately 30 days to first bench test all compliant units at Harris, Bellevue, NE, and then field test the units at NOAA's satellite command and data acquisition station in Fairbanks, AK. The tests will be rigorously and uniformly applied to each capable unit, and the results will be used as the primary weight of determination of mission technical suitability. The evaluation determination will rely on the written material in your response to this RFQ, and the performance of your unit(s) in the tests. Government personnel will exclusively make the determination of selection for award, based on the written material and test results, and the unit prices and sustainability of the systems. Technical suitability will be integrated with the offered price of all units and options to determine the BEST VALUE source selection. The following weights will apply to the evaluation: Factor A. System-Level Compliance: The Offeror demonstrates on paper, and by direct test on the bench and in the operational environment in the delivery location(s) in the field, that the proposed commercial item conforms in all respects to the mandatory system specifications set forth in the requirement: Maximum Points, 50; if non-conformance to some specified requirements exists, but system trade space exists and excess compliance in one or more other requirements offsets the first non-complying requirement, the maximum points that can be earned are 30. Factor B. Past Performance: It can be shown that the commercial item or its closest architectural counterpart has performed reliably in an operational setting, supporting similar spacecraft missions with high quality products, without experiencing long periods of outage due to component or operational failures. Reliability will be based on MTBF hours approaching 20,000 hrs.; ease of operational usage by trained personnel; level of dependence on LRU spares, or a complete, spare chassis; MTTR in hours; and the quality of the training package available for O&M support personnel. The maximum points that can be earned in this Factor are 20. Factor C. System Set-up: The Offeror must demonstrate to the Government the ease and flexibility of the demodulator's embedded configuration menus and options to accommodate new satellite missions. The first unit that will be provided for demonstration and test must include an operations manual that will direct a first-time user through a set-up routine designed to add one or more satellite missions. The maximum points that can be earned in this Factor are 20. Factor D. Sustainability: The offer will be evaluated for its proposal content for value-added training, remote technical support, quick response time on repairs, and the extent of the warranty protection. The maximum points that can be earned are 10. The preceding four Factors are termed Mission Suitability. Mission Suitability is substantially more important in computing the final integrated score than price. If technical scores are rated in close proximity, the

Government will rely to a greater extent on price to make its source selection decision. All deliverable items must be delivered by no later than December 31, 2003. A standard commercial warranty is requested as part of the price, and must be incorporated in the contract terms, if the offer is selected. An optional priced, extended warranty term is highly desirable. The Offeror must price each UNIT PRICE as a firm-fixed-price (FFP), to include all direct and indirect costs, administrative costs and profit or fee, including but not necessarily limited to, all direct labor, manufacturing costs, materials, quality assurance and packaging, licensing, on-site testing support if elected by the Offeror, and other direct costs such as shipping, postage and handling costs for delivery of the units to the Harris Corp., Bellevue, NE, F.O.B. destination, training costs, the cost of performing any modifications to comply with the specifications, if applicable, and technical support costs, whether remote or on-site, as required. Offers must quote prices as follows: CLIN 1001 through 1007, seven (7) each Selectable High Data Rate Demodulator, Unit Priced in U.S. Dollars (if Test Modulators are proposed as separate chassis, add CLINS 1001a and 1005a); CLIN 1008, Option 1 Demodulator; CLIN 1009, Option 2 Demodulators; CLIN 1010, Option 3 Demodulators; CLIN 1011, extended warranty and time period; CLIN 1012, on-site test and training (up to 10 staff); CLIN 1013, technical support (remote or on-site—specify limit on hours). This solicitation is being conducted in accordance with Public Law 103-355 (41 U.S.C. 264 note). The intent of this synopsis is to describe the required commercial items through the process described in the Federal Acquisition Regulation (FAR) subpart 11.002, request FFP quotes through this RFQ, and also to solicit any appropriate commercial practices. A fully compliant proposal must include the CLIN prices above, three signed copies of Form SF-1449, which acknowledges the following terms, hereby made part of this solicitation as its terms and conditions under the proposed contract with the selected Offeror: FAR 52.212-1, "Instructions", 52.212-2, "Evaluation" (tailored evaluation criteria added herein), 52.212-3, "Reps and Certs" (complete all check-off blocks), 52.212-4, with the following tailored terms incorporated herein: FAR 52.243-1 Changes—Fixed Price (AUG 1987); 52.233-1--Disputes (July 2002) FAR 52.249-2--Termination for Convenience of the Government (Fixed-Price) (Sept 1996), as well as any addenda to the terms, based on the Offer—if applicable to commercial practices. Addenda to 52.212-2 are as follows: a single award will be selected based on best value, with the following criteria: mission suitability, including the four Factors identified herein, and the quoted total price, including all options. Respondents to this notice are also requested to provide any necessary feedback on commercial terms and conditions and other operational support and warranty terms common in this industry, for possible incorporation in the final terms and conditions. FFP Offers are due at the location specified herein (ten (10) paper copies and one electronic copy) by NO LATER THAN May 30, 2003, at 2:00 P. M. local time. Designate those sections that are business proprietary and subject to exclusion from release under the FOIA. No requests for further specifications will be honored. Contact the Contracting Officer at jay.moore@noaa.gov if you have any questions. The Test Plan, as well as the SF-1449 and draft terms and conditions, can be viewed at the following web site (omit parentheses): http://npoess.noaa.gov/News/ContractOpportunities.(html), effective May 19, 2003. Click on "Programmable High Data Rate Demodulator". View the FAR references at http://farsite.hill.af.mil/VFFARA.(HTM). IMPORTANT!! Those interested in responding with a COMPLIANT PROPOSAL for this requirement MUST SUBMIT

their timely proposal to: Mr. Jay W. Moore, NPOESS/Integrated Program Office, 8455 Colesville Road, Suite 1450, Silver Spring, MD 20910; Tel. 301-713-4751, and provide full contact information. NO OTHER RFP OR RFQ WILL BE ISSUED-THIS COMPRISES THE COMPLETE SOLICITATION PACKAGE FROM WHICH FFP UNIT PRICED (CLIN) QUOTES ARE HEREBY REQUESTED.